UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,930	06/13/2006	Friedrich Luellau	LUELLAU ET AL-1 PCT	6866

25889   7590   07/06/2009
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CHACKO, SUNIL

ART UNIT	PAPER NUMBER
2625	

MAIL DATE	DELIVERY MODE
07/06/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>02 May 2006</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-18</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-18</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>05 May 2006</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>05/02/2005</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

1.   Claims 1-18 are presented for examination.

2.   Applicant's claim for the benefit of a prior-filled application under 35 U.S.C.

119(a-d) is acknowledged.

3.   The information disclosure statements (IDS) submitted on May 02, 2006. The

submissions are in compliance with the provisions of 37 CFR 1.97. Accordingly, the

information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

5.   Claim 13 is rejected due to the fact that a *control program* is not on of the

Statutory Categories. Please see MPEP 2106.01 Computer-related Nonstatutory

Subject Matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claims 1-3, 8-12, & 16-18 are rejected under U.S.C. 102(b) as being

unpatentable over of Uemura (US Application # 2001/0048460 A1)

As to Claim 1,

Uemura et al teaches *a device for the digital exposure of light-sensitive materials,* (See

Abstract)

- *with an electronic picture memory (2) for storing a master image,* (See

   paragraph 21 and Fig. 3 element 36)

- *with an exposure unit (8) which preferably comprises a light source (22),* (See

   paragraph 20 and Fig. 2 element 12)

- *an electronically activatable light modulator (21) for representing a part picture*

   (24) of the master image, and (See paragraph 18 and Fig. 2 element LD)

- *imaging optics (23) for projection of the part picture (24) onto the light-sensitive*

   material (10), (See paragraph 18)

- *with a drive device consisting of motors (9) and of a motor control (12), for the*

   movement of the exposure unit (8) parallel to the surface of the light-sensitive

   material (10), with a scroll means (7) for scrolling a picture strip (25, 26) of the

   master image through the light modulator (21), and with a control device (1) for

synchronising the drive device (9, 12) with the scroll means (7), (See paragraph

20)

- *wherein a rapid intermediate memory (16) for storing a strip-like region (25, 26)*

  of the master image is provided, from which the picture data for the part picture

  (24) to be exposed in each case, may be transmitted onto the light modulator

  (21) synchronously with the movement of the exposure unit (8). (See paragraph

  22, Uemura teaches a buffer memory which are connected directly light source

  so that it can the light source and the buffer memory are in sync with each other)

As to Claim 2 (which depends on claim 1)

Uemura further teaches *a device,*

- *wherein the intermediate memory (16) is arranged in the exposure unit (8).* (See

  paragraph 22, teaches that the connected directly to the light source driving

  means, which are in the exposure unit)

As to Claim 3 (which depends on claim 1)

Uemura further teaches *a device,*

- *wherein the intermediate memory (16) comprises two part memories (17, 18) for*

  the storage of two picture strips (25 26') of the master image, (See Fig. 3

  elements HM1 and element HM2)

- *and that during the transmission of the data from the first part memory (17) to*

  the light modulator (21) for the exposure of the first picture strip (25), the data for

the exposure of the next picture strip (26) of the master image may be

transmitted from the picture memory (2) to the second part memory (18). (See

Fig. 3 and paragraph 21, Uemura teaches that the image data from 1st image

memory is sent to image divider, and then sent to separate memory storages,

from here the memory is sent to the light modulator via line buffers. Once the

line buffer is clearer, it gets its next set of image data from the 2 image memory,

which gets its image data from the 1st image data)

As to Claim 8 (which depends on claim 1)

Uemura further teaches *a device,*

- *wherein the exposure time for a pixel is roughly equal to the travel time which*

  the exposure unit (8) requires for travelling over a pixel width. (Uemura teaches

  that the recoded image is made up of pixels, these pixels are recorded on the

  film, by the turning on and off laser diodes, it can be understood from this that as

  the exposure unit moves across the position of the pixel it is able to create the

  pixel onto the recoding medium, in this short period of time. see paragraph 18)

As to Claim 9 (which depends on claim 1)

Uemura further teaches *a device,*

- *wherein the division of the master image into picture strips is effected in a*

  manner such that the picture strips (25, 26) partly overlap and that the light

  quantity per pixel column orientated in the scroll direction, which serves for the

exposure, is arranged reducing towards the edges of the picture strips (25, 26),

so that a uniform exposure of the complete printing plate (10) results. (Uemura

teaches that after the image divider, the image data is split and then sent to the

laser diodes for outputting in picture strips, these picture strips are shown in Fig.

4, as A1-A4. These images are outputted onto the recording medium, in the

scroll direction so that image covers the printing plate, See paragraph 27)

As to Claim 10 (which depends on claim 1)

Uemura further teaches *a device,*

- *wherein the division of the master image into picture strips is effected in a*

  manner such that the picture strips (25, 26) abut on one another in a seamless

  manner and that the light quantity per pixel column orientated in the scroll

  direction, which serves for exposure, is set such that the optical impression of

  the left and of the right edge of the picture strip (25, 26) is identical, so that a

  uniform exposure of the complete printing plate (10) results. (Uemura teaches

  that after the image divider, the image data is split and then sent to the laser

  diodes for outputting in picture strips, these picture strips are shown in Fig. 4, as

  A1-A4. It is see from this figure that the image is seamless connected together.

  These images are outputted onto the recording medium, in the scroll direction so

  that image covers the printing plate, See paragraph 27)

As to Claim 11

Uemura teaches *a method for the digital exposure of light-sensitive materials* (See

Abstract)

- *using a device with an electronic picture memory (2) for storing a master image,*

  (See paragraph 21 and Fig. 3 element 36)

- *with an exposure unit (8) which preferably comprises a light source (22),* (See

  paragraph 20 and Fig. 2 element 12)

- *an electronically activatable light modulator (21) for representing a part picture*

  (24) of the master image, and (See paragraph 18 and Fig. 2 element LD)

- *imaging optics (23) for the projection of the part picture (24) onto the light*

  sensitive material (10), (See paragraph 18)

- *with a drive device, consisting of motors (9) and a motor control (12), for moving*

  the exposure unit (8) parallel to the surface of the light-sensitive material (10),

  with a scroll means (7) for scrolling a picture strip (25, 26) of the master image

  through the light modulator (21), and with a control device (1) for synchronising

  the drive device (9, 12) with the scroll means (7), (See paragraph 20)

- *wherein the method encompasses the use of a rapid intermediate memory (16)*

  in which a strip-like region (25, 26) of the master image is stored, from which the

  picture data for the part picture (24) to be exposed in each case is transmitted

  onto the light modulator (21) synchronously with the movement of the exposure

  unit (8). (See paragraph 22, Uemura teaches a buffer memory which are

  connected directly light source so that it can the light source and the buffer

  memory are in sync with each other)

As to Claim 12 (which depends on claim 11)

Uemura further teaches *a method,*

- *wherein the intermediate memory (16) comprises two part memories (17, 18) for*

  storing two picture strips (25, 26) of the master image, (See Fig. 3 elements HM1

  and element HM2)

- *and that during the transmission of the data from a first part memory (17) to the*

  light modulator (21) for the exposure of a first picture strip (25), the data for the

  exposure of the next picture strip (26) of the master image is transmitted from the

  picture memory (2) to the second part memory (18). (See Fig. 3 and paragraph

  21, Uemura teaches that the image data from 1st image memory is sent to image

  divider, and then sent to separate memory storages, from here the memory is

  sent to the light modulator via line buffers. Once the line buffer is clearer, it gets

  its next set of image data from the 2 image memory, which gets its image data

  from the 1st image data)

As to Claim 16 (which depends on claim 11)

Uemura further teaches *a method,*

- *wherein the exposure time for a pixel is roughly equal to the travel time which*

  the exposure unit (8) requires for travelling over a pixel width. (Uemura teaches

  that the recoded image is made up of pixels, these pixels are recorded on the

  film, by the turning on and off laser diodes, it can be understood from this that as

the exposure unit moves across the position of the pixel it is able to create the

pixel onto the recoding medium, in this short period of time. see paragraph 18)

As to Claim 17 (which depends on claim 11)

Uemura further teaches *a method,*

- *wherein the division of the master image into picture strips is effected in a*

  manner such that the picture strips (25, 26) partly overlap, and that the light

  quantity per pixel column orientated in the scroll direction, which serves for

  exposure, is arranged decreasing towards the edges of the picture strip (25, 26),

  so that a uniform exposure of the complete printing plate (10) results. (Uemura

  teaches that after the image divider, the image data is split and then sent to the

  laser diodes for outputting in picture strips, these picture strips are shown in Fig.

  4, as A1-A4. These images are outputted onto the recording medium, in the

  scroll direction so that image covers the printing plate, See paragraph 27)

As to Claim 18 (which depends on claim 11)

Uemura further teaches *a method,*

- *wherein the division of the master image into picture strips is effected in a*

  manner such that the picture strips (25, 26) abut one another in a seamless

  manner and that the light quantity per pixel column orientated in the scroll

  direction, which serves for exposure, is set such that the optical impression of

  the left and of the right edge of the picture strip (25, 26) is identical, so that a

uniform exposure of the complete printing plate (10) results. (Uemura teaches

that after the image divider, the image data is split and then sent to the laser

diodes for outputting in picture strips, these picture strips are shown in Fig. 4, as

A1-A4. It is see from this figure that the image is seamless connected together.

These images are outputted onto the recording medium, in the scroll direction so

that image covers the printing plate, See paragraph 27)

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

8.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating
      obviousness or nonobviousness.

9.   Claim 4-7, & 13-15 are rejected under U.S.C. 103(a) as being unpatentable over

Uemura (US Application # 2001/0048460 A1) in view of Isono et al. (US Patent #

6,249,306 B1)

As to Claim 4 (which depends on claim 1)

Uemura does not explicitly teach the *a device,*

- *wherein the control device (1) consists of a computer with a control program,*

  wherein the picture memory (2) is also accommodated in the computer.

However, Isono et al. teaches a Multi-Beam Drawing Method, that consists of a

computer program that is capable of being used by a computer wherein the picture

memory is stored by the computer, See column 7 lines 43-48. It would have been

obvious to one skilled in the art, at the time of the invention to combine Uemura in view

of Isono et al. because incorporating the method of Mutli-Beam Drawing onto a control

program and storing it on computer would enable the product to be easily transferable

and accessibly among several devices.

As to Claim 5 (which depends on claim 4)

Uemura does teach the following limitations, a device that consists of a

- *an exposure data manager (4), a picture data manager (6) and a position data*

  manager (5), wherein the picture data of the picture memory (2), is divided into

  data packages suitable for the stripwise exposure by the exposure data

  manager (4), (See paragraph 21 and Fig 3, Uemura teaches that the Image

  Divider splits the image data into pieces which are then sent to line buffers which

  divide the image data to be sent into diode lasers which use the exposure data

  to output the image)

- *and are transferred to the picture data manager (6), wherein the exposure data manager (4) produces position data and speed data for the motor control (12), which are transferred to the position data manager (5)* (Uemura teaches that the line buffers are connected to an effective signal generating circuit which uses image data from the line buffer image data to obtain the needed information to control the speed and position for motor control, by creating signals from the effective signal generating circuit See Fig. 3 and paragraph 34 & 35)

Uemura doest not explicitly teach *a device, that* has a *control program*, however Isono et al. teaches a Multi-Beam Drawing Method that consists of a computer program that is capable of being used by a computer wherein the picture memory is stored by the computer, See column 7 lines 43-48. It would have been obvious to one skilled in the art, at the time of the invention to combine Uemura in view of Isono et al. because incorporating the method of Mutli-Beam Drawing onto a control program and storing it on computer would enable the product to be easily transferable and accessibly among several devices.

As to Claim 6 (which depends on claim 5)

Uemura further teaches *a device according,*

- *wherein the control device (1) comprises the scroll means (7) which cooperates with a trigger card (3) designed with regard to hardware, that the trigger card (3) is connected to position sensors (13) which deliver data on the actual position of the exposure unit (8), and that the trigger card (3) controls the data flow from the*

intermediate memory (16) to the light modulator (21) synchronously with the

movement of the exposure unit (8), wherein a handshake (28) between the

trigger card (3) and the motor control (12) causes the motor control (12) to call

up the position- and speed data from the position data manager (5) and to

accordingly activate the servomotors (9). (Uemura teaches an effective signal

generating circuit, which reads on trigger card, See Fig. 3. Uemura further

teaches an Exposure Drum Movement Control Circuit that is connected to a

Controller, which communicates with the effective signal generating circuit, See

Fig. 3. Exposure Drum Movement Control Circuit keeps track of the position of

the exposure unit, the movement of the exposure unit reads on the scroll means

See paragraph 20. Uemura further teaches that effective signal generating

circuit (ENm) sends signals to the line buffers which then send the image data to

the light modulator. The communication between the line buffer and the ENm

and the communication between the ENm and the Exposure Drum movement

control circuit, enables the synchronous movement on the exposure unit motor.)

As to Claim 7 (which depend on claim 6)

Uemura further teaches *a device,*

- *wherein the scroll means (7) cooperates with the picture data manager (6) in a*

  manner such that the stripwise transmission of the picture data from the picture

  data manager (6) to the intermediate memory (16) is always effected just at the

  time when no data for the activation of the light modulator (21) is taken from the

respective part memory (17, 18). (Uemura teaches the movement of the

exposure drum, which reads on scroll means, is dependant on the stipwise

transmission of the image data into the 2nd Image memory, which is split into

various sections so that it can be sent into from line buffers memory to the laser

diodes , which read on light modulator, for output, See Fig. 3 and paragraph 20

& 22)

As to Claim 13 (which depends on claim 11)

Uemura does teach the following limitations, a device that consists of a

- *wherein the control program comprises an exposure data manager (4), a picture*

  data manager (6) and a position data manager (5), that the picture data of the

  picture memory (2) is divided by way of the exposure data manager (4) into data

  packages which are suitable for the stripwise exposure, and are transferred to

  the picture data manager (6), (See paragraph 21 and Fig 3, Uemura teaches that

  the Image Divider splits the image data into pieces which are then sent to line

  buffers which divide the image data to be sent into diode lasers which use the

  exposure data to output the image)

- *wherein the exposure data manager (4) produces position data and speed data*

  for the motor control (12) which is transferred to the position data manager (5).

  (Uemura teaches that the line buffers are connected to an effective signal

  generating circuit which uses image data from the line buffer image data to

  obtain the needed information to control the speed and position for motor

control, by creating signals from the effective signal generating circuit See Fig. 3

and paragraph 34 & 35)

However, Uemura doest not explicitly teach *a method, wherein the control program*

comprises, however Isono et al. teaches a Multi-Beam Drawing Method that consists of

a computer program that is capable of being used by a computer wherein the picture

memory is stored by the computer, See column 7 lines 43-48. It would have been

obvious to one skilled in the art, at the time of the invention to combine Uemura in view

of Isono et al. because incorporating the method of Mutli-Beam Drawing onto a control

program and storing it on computer would enable the product to be easily transferable

and accessibly among several devices.

As to Claim 14 (which depends on claim 13)

Uemura further teaches a method,

- *wherein the control device (1) comprises the scroll means (7), that the scroll*

  means (7) cooperates with a trigger card (3) which is designed with regard to

  hardware and which is connected to position sensors (13), that the position

  sensors (13) provide data on the actual position of the exposure unit (8), and that

  the trigger card (3) controls the data flow from the intermediate memory (16) to

  the light modulator (21) synchronously with the movement of the exposure unit

  (8), wherein a handshake (28) between the trigger card (3) and the motor control

  (12) causes the motor control (12) to call up the position- and speed data from

  the position data manager (5), and to accordingly activate the servomotors (9).

(Uemura teaches an effective signal generating circuit, which reads on trigger

card, See Fig. 3. Uemura further teaches an Exposure Drum Movement Control

Circuit that is connected to a Controller, which communicates with the effective

signal generating circuit, See Fig. 3. Exposure Drum Movement Control Circuit

keeps track of the position of the exposure unit, the movement of the exposure

unit reads on the scroll means See paragraph 20. Uemura further teaches that

effective signal generating circuit (ENm) sends signals to the line buffers which

then send the image data to the light modulator. The communication between

the line buffer and the ENm and the communication between the ENm and the

Exposure Drum movement control circuit, enables the synchronous movement

on the exposure unit motor.)

As to Claim 15 (which depends on claim 14)

Uemura further teaches *a method,*

- *wherein the scroll means (7) cooperates with the picture data manager (6) in a*

  manner such that the stripwise transmission of the picture data from the picture

  data manager (6) to the intermediate memory (16) is always effected just at the

  time when no data for the activation of the light modulator (21) is taken from the

  respective part memory (17, 18). (Uemura teaches the movement of the

  exposure drum, which reads on scroll means, is dependant on the stipwise

  transmission of the image data into the 2nd Image memory, which is split into

  various sections so that it can be sent into from line buffers memory to the laser

diodes , which read on light modulator, for output, See Fig. 3 and paragraph 20

& 22)

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to SUNIL CHACKO whose telephone number is (571)270-

7221. The examiner can normally be reached on Mon-Thurs 8AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Benny Q. Tieu can be reached on 571-272-7490. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SUNIL CHACKO/
Examiner, Art Unit 2625

/Benny Q Tieu/
Supervisory Patent Examiner, Art Unit 2625